

REMARKS

Claims 1-17, 19-30 and 35-40 are in the case. Claims 39-40 are new. Claim 18 is cancelled.

This Amendment is being filed contemporaneously with Applicant's Request for Continued Examination ("RCE"). It is requested that the amendments contained herein be entered prior to examination of the RCE. The arguments set forth in Applicant's Reply of March 9, 2006 are hereby incorporated by reference and it is respectfully requested that such arguments be entered and fully considered.

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,634,875 ("Kugeler"). Claim 1 is amended to incorporate all of the limitation of claim 18, which is now cancelled. Claim 1 requires, *inter alia*, "a removable lid positioned atop the body "so as to form a lid-to-body interface" and that "the lid and body are a non-unitary structure." Such limitations clearly recite that the lid is a separate structure from that of the body and is removable therefrom so as to allow access to the cavity. No new matter is added. Support can be found in Figs. 2-4 of the present application and the corresponding discussion.

Kugeler does not disclose a lid as recited in claim 1. Instead, the Kugeler system is a warehouse-style storage facility where a building 2 acts as the body and the roof/top portion of the building 2 acts as the lid (as interpreted in the January 30, 2006 Office Action). The building/structure 2 of Kugeler is a unitary structure. As a result, no lid-to-body interface exists and the top portion/roof of the Kugeler system can not be removed from the body 2 without destroying the integrity and functioning of the building/structure. *See Kugeler*, Fig. 1. Thus, it is clear that the Kugeler system does not anticipate claim 1 of the present application.

With respect to any argument that it would have been obvious under 35 U.S.C. § 103 to modify the Kugeler system so that its top portion/roof is non-unitary and removable from the body 2, such a rejection would be improper and the result of impermissible hindsight to recreate the invention. As discussed in Applicant's March 9, 2006 Reply, the nature and style of the Kugeler facility does not lend itself to such modification.

By way of background, the lid of the present invention is a removable non-unitary structure with the body because of the canister loading procedure for which the system is designed to accommodate. As described in the specification, a canister is loaded into the body of the present invention by positioning a transfer cask containing the canister directly above the below-grade body. The lid is removed from the below grade body to provide access to the cavity and the canister is then lowered from the transfer cask into the cavity of the below-grade body. The lid is then placed atop the body and is non-fixedly secured to the body. The non-unitary nature of the lid and body of the present invention is necessary to allow the canister to be easily removed from the cavity in the future without compromising the integrity of the system. *See Present Application, §§ [0045]-[0046] and Fig. 5.*

To the contrary, the nuclear waste transfer procedure of the Kugeler facility, , operates in a very different manner than that of the present invention. As discussed in Applicant's March 9, 2006 Reply, the Kugler facility is a warehouse-style storage facility storing hundreds of waste capsules 11. The waste capsules 11 are loaded into the storage container 7 of Kugeler by bringing transport containers 46 containing the waste capsules 11 into a loading dock area 44 that is fully enclosed and below the roof portion of the facility. *See Kugeler, Fig. 2 and Col. 7, Lines 31-38.* The waste capsules 11 are then removed from the transport containers 46 and placed in the storage shafts 10 of the storage container 7 with an overhead crane installation. Because this entire transfer procedure is performed within the Kugeler facility, there is absolutely no reason why one would modify the roof/top portion of the facility to be a removable and non-unitary structure with the storage walls 2. In fact, doing so would be undesirable because it would compromise the structural integrity and radiation absorbing characteristics of the Kugeler facility. This would be especially problematic in the Kugeler facility where the waste capsules 11 are removed from the storage containers 46 and exposed to the internal environment of the facility during the crane transfer procedure.

Moreover, the only reason one would ever modify the roof/top portion of the Kugeler facility to be a removable and non-unitary structure with the storage walls 2 is if the entire storage container 7 was to be repetitively removed from and/or inserted into the cavity formed by the storage walls 2. However, the storage container 7 of the Kugler facility is an enormous

structure having a diameter of almost 20ft. and a height over 75 ft. There is absolutely no mention or suggestion in Kugeler that it is desirable to remove this structure 7 from the body 2. In fact, doing so would destroy the fluidic connections of the closed-circuit coolant system along with other aspects of the Kugeler system.

Thus, for these reasons it is believed that amended claim 1 is clearly patentable over Kugeler. Any combination of Kugeler with prior art that shows a removable lid would be improper by the nature of the Kugeler system, irrespective of the teachings of the other prior art reference. It is respectfully requested that a further search be performed and pending the results of said search, claim 1 be allowed.

Turning now to claim 35, claim 35 recites, *inter alia*, that "the cavity has a horizontal cross-section that accommodates no more than one canister" and that the canister is "adapted for dry storage of spent fuel." As a threshold matter, it is requested pursuant to MPEP § 2111.04 that the "adapted for" claim language be given proper weight and consideration in determining patentability. The law is absolutely clear that when such a limitation "states a condition that is material to patentability, **it cannot be ignored** in order to change the substance of the invention." *See In re Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329, 74 USPQ2d 1481, 1483 (Fed. Cir. 2005); *see also* MPEP § 2111.04.

With that said, it is noted that the Kugeler storage system is similar to the warehouse-style storage facilities disclosed in the prior art references of record that have already been distinguished by the Applicant, such as those systems shown in Yamanka and Chaudon. While the storage walls 2 of the Kugeler structure are shaped different than the Yamanka and Chaudon facilities, the Kugeler structure still holds about 450 waste capsules 11 (which are the structural and functional equivalent of the canister in the present invention). *See Kugeler, Col. 3, Lines 47-52 and Figs. 1 and 2*. Thus, as with the Yamanka and Chaudon references, Kugeler does not disclose "a body forming a cavity having a horizontal cross-section that accommodates no more than one spent fuel canister," as is required by claim 35. To the contrary, the cavity formed by the storage walls 2 of the Kugeler facility hold over 450 canisters/capsules.

The Applicant notes that the cylindrical structure 7 of the Kugeler system is being interpreted to read on the term "canister." Importantly, this term has been amended in claim 35 to recite the structural limitation that the "canister is adapted for the dry storage of spent fuel." As understood in the art, a canister is adapted for the dry storage of spent fuel by first loading the canister with spent nuclear fuel, drying the interior of the canister to a desired dryness level, backfilling the canister with a non-reactive gas, and sealing the canister.

While the storage container 7 of the Kugeler system is generally cylindrical in shape, this structure 7 is not "a canister adapted for the dry the storage of spent fuel," as is required by claim 35. Referring to the teachings of Kugeler, the storage shafts 10 of the storage container 7 contain the waste capsules 11. While these storage shafts 10 are capable of being hermetically sealed with caps 12, there is no teaching that these shafts 10 have been properly dried or backfilled with a non-reactive gas. Moreover, the repetitive opening and closing of the storage shafts 10 to insert new waste capsules 11 would allow any inert gas contained within the storage shafts 10 to escape and water vapor to enter. Thus, the storage container 7 of Kugeler is not a canister adapted for dry storage of spent fuel, as is required by claim 35.

Finally, a review of the Kugeler reference shows that a single waste capsule 11 is the structural and functional equivalent of "a canister adapted for the dry the storage of spent fuel," not the storage container 7. The waste capsules 11 hermetically seal the nuclear waste by embedding the nuclear waste in borosilicate glass to achieve proper dry storage conditions. However, as discussed in Applicant's March 9, 2006 Reply, the cavity formed by the walls 2 of the Kugler facility is sized to hold over 450 of these waste capsules 11. Thus, if the Kugler system is interpreted so that the waste capsules 11 read on the claim limitation of "a canister adapted for the dry the storage of spent fuel," the Kugeler system does not disclose the body 2 forming "a cavity having a horizontal cross-section that accommodates no more than one canister," as is also required by claim 35.

Thus, for these reasons it is believed that amended claim 35 is clearly patentable over Kugeler and it is respectfully requested that a further search be performed and pending the results of said search, claim 35 be allowed.

**Amendment Accompanying Request for Continued Examination**

Regarding claims 38 and 40, Applicant notes that the storage system of Kugeler uses a closed-circuit forced flow coolant system. *See Kugeler, Col. 5, Lines 12-31, 3-I.* To the contrary, the storage system of the present invention is a passive ventilated cooling system. Thus, the Kugeler system is not "a passive cooling system free of forced cooling equipment," as is required by claims 38 and 40.

It is believed that all grounds of rejection and objection have been traversed or obviated, and that the rejections and objection should be withdrawn, and the application allowed.

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